(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 September 2001 (20.09.2001)

PCT

(10) International Publication Number
WO 01/68184 A1

(51) International Patent Classification[7]: A61N 5/06

(21) International Application Number: PCT/IT01/00125

(22) International Filing Date: 13 March 2001 (13.03.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
VR00A000025 16 March 2000 (16.03.2000) IT

(71) Applicant *(for all designated States except US)*: **BOLLANI, S.R.L.** [IT/IT]; Via Serio, 1, I-25015 Desenzano del Garda (IT).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **BOLLANI, Francesco** [IT/IT]; Via Serio, 1, I-25015 Desenzano del Garda (IT).

(74) Agent: **SANDRI, Sandro**; Europatent - Euromark S.r.l., Via Locatelli, 20, I-37122 Verona (IT).

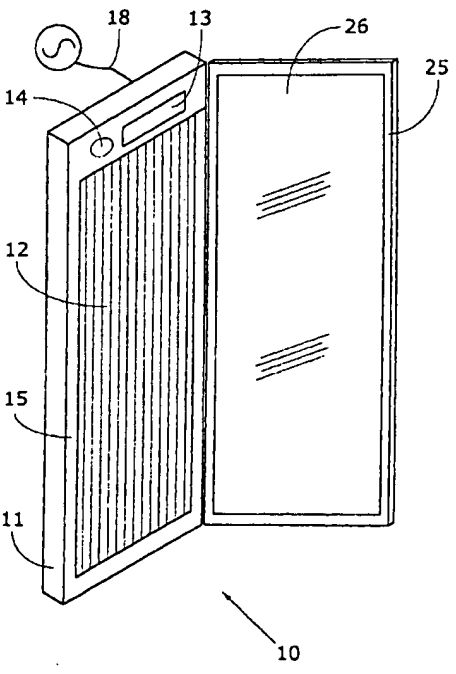
(81) Designated States *(national)*: AE, AG, AL, AM, AU, BA, BB, BG, BR, BY, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, RO, RU, SD, SG, SI, SK, SL, TJ, TM, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PANEL SOLARIUM



(57) Abstract: A panel solarium (10) for use in the home or in a suitable environment such as a hotel room, nursing home, hospital etc., comprises a frame (11) supporting a series of UV rays emitting lamps (12), a control device (13) and a timer (14) regulating the intensity of light emitted by said lamps (12) and an electrical power supply circuit enabling said solarium (10) to be connected to a suitable source of electric energy; it has the configuration of a cabinet including said frame (11), and it comprises means for attaching said cabinet to a fixed or mobile wall.

WO 01/68184 A1

PANEL SOLARIUM

* * * * *

TECHNICAL FIELD

This invention concerns a panel solarium

More specifically, it concerns a panel solarium for home and/or professional use (for example, for hotels, swimming pools, nursing homes, etc.) which is preferably hung from or attached to a fixed or mobile wall, with a structure facilitating its use in domestic and/or professional situations such as hotels, swimming pools, nursing homes, hospitals etc., either with the user standing in front of the solarium at a distance of about 15-30 cm (vertical solarium) or lying down on a suitable surface (for example, floor, bed, couch) in the case of a horizontal solarium.

BACKGROUND ART

The use of ultraviolet lamps or lamps emitting other forms of light radiation to tan or otherwise provide benefits for the user's skin is a well known fact.

These benefits can be noted at both organic and physiological level and are exploited for both aesthetic and medical purposes. Ultraviolet rays can be used to improve blood circulation and treat diseases and/or blemishes of the skin (for example, psoriasis, vitiligo, etc).

They also stimulate production of vitamin D, indispensable for assimilation of calcium in the bones and prevention of diseases such as rickets etc.

These lamps are usually installed in special rooms within centres specifically dedicated to body care and physical wellbeing, sometimes combining treatment by exposure to light and ultraviolet radiation with other beauty treatments.

A booking is often required for access to these centres, restricting the user's free time during certain

time bands.

In addition, the user must go to these centres, also dedicating time to travel and often arriving frenetically after an intense working day.

It would be a different matter if the user could benefit from exposure to the light and ultraviolet radiation at any suitable moment of the day and within his own home or in a hotel room occupied for work or leisure purposes, or any other situation offering the possibility of privacy, perhaps carrying out other equally relaxing activities at the same time, such as listening to music or performing gymnastic exercises.

DESCRIPTION OF THE INVENTION

This invention intends to provide a panel solarium for convenient use in private situations by the user who thus avoids the need to travel to other locations to obtain the same exposure treatment.

This invention also intends to provide a panel solarium for easy installation in any location within a private dwelling or other suitable environment (hotel room, nursing home, etc), without necessitating particular operations to adapt support structures.

It may at times also represent an additional interior design element.

This invention also intends to provide a panel solarium easy to construct and distribute commercially in such a way as to be financially advantageous and thus attractive to potential users.

This is achieved by means of a panel solarium with the features described in the main claim.

The dependent claims describe advantageous embodiments of the invention.

According to the invention, the panel solarium comprises a compact frame supporting at least one lamp on

view when in use, a device to control the required output and exposure time (speed of action), means of attaching the frame to a fixed or mobile wall and an electrical power circuit enabling the solarium to be connected to any suitable energy source, for example, the type of single phase electrical power source normally used in the home.

According to a particular embodiment of the invention, the panel solarium may be equipped with at least one door to cover and/or close the appliance when not in use.

This at least one cover and/or closure door is preferably equipped with reflecting surfaces. When the solarium is in use, these are oriented towards the space irradiated by the lamp of the panel, thus also diffusing the radiating energy emitted on the sides of the user.

The solarium may be fixed to or built into any domestic wall, for example in a bathroom, enabling the user to use it at any time and even for short periods, regulating the exposure time and distance of use of the radiation according to his or her requirements.

The cover door may also serve as a mirror, completely concealing the appliance.

DESCRIPTION OF THE DRAWINGS

Other features and advantages of the invention will become evident on reading the following description of an embodiment of the invention, given as a non-binding example, with the help of the enclosed drawing representing a side view of a solarium with one closure door.

DESCRIPTION OF A FORM OF EMBODIMENT

In the figure, the reference number 10 generally indicates a solarium for home use, in this specific case a panel solarium 10 comprising a frame 11 supporting the lamps 12, a control panel 13 and a timer 14 to regulate and display the length of exposure to the light and ultraviolet radiation emitted by the lamps 12.

The frame 11 takes the form of a box with edges 15 to protect the lamps 12 and a transparent sheet providing mechanical protection mounted on the front of the frame so as to be easily accessible to the user.

The edges 15 and the sheet form a recess containing the lamps 12.

The surfaces of this recess are preferably covered in reflecting material to improve diffusion and minimise dispersion of the light radiation.

The solarium 10 is equipped with an electric circuit powering the lamps 12, terminating in a cable 18 with an electric plug at one end, preferably single phase, which can be plugged into any suitable mains socket available.

The panel 10 may be fixed, for example, to a side wall in a bathroom where the user may use it, combining, for example, exposure to the light radiation with a jacuzzi treatment, at the end of which the skin is in an ideal condition to maximise efficiency of the exposure to the light and ultraviolet radiation.

The panel 10 is fixed by means of self-tapping screws equipped with a plate which penetrates the wall, or by means of the appropriate metal bracket provided with the appliance.

In use, the solarium 10 may be fixed resting on the floor and extending vertically for a height corresponding to the mean user height to reduce the stress on the bracket which does not therefore have to support the full weight of the appliance, but only the lateral force should the solarium fall forwards.

The recess may be closed by a cover sheet 23 in transparent material designed to protect the lamps 12 and safeguard the user from direct contact with the lamps 12 themselves.

The control panel may display the time remaining until

the end of treatment.

In addition, the control panel 13 may be equipped with a device to manage and programme treatment by means of a token or prepaid electronic card.

According to a simplified procedure, the solarium 10 may operate by means of a manual timer 14 with emission of light radiation at a constant intensity and frequency.
On request, the panel 10 may be equipped with an acoustic signal indicating the end of the treatment cycle.

With reference to the embodiment example shown in the figure, the panel solarium 10 may take the form of a cabinet closed by a side-hinged door 25 with a reflecting surface 26, for example a mirror, on both sides.

In this way, the cabinet can easily be inserted into a special niche in a wall in such a way as to be concealed when the door 25 is in the closed position.

According to another embodiment, the solarium may be equipped with two doors hinged to opposite edges 15 of the panel 10.

The reflecting surfaces 26 are designed to uniformly diffuse the light radiation emitted by the lamps 12, particularly if the panel 10 is equipped with two doors 25.

The non-reflecting surface of these doors may be equipped with functional domestic fittings such as coat hooks or towel rails, or may be simply decorative.

According to another embodiment, the panel solarium 10 may be built into a special niche in a wall of the room in such a way as to be concealed when the niche is closed with a door.

Again, the panel solarium 10 can be fixed to the wall via uprights (not illustrated) approximately at right angles to the floor.

Each upright may have a means of attachment/detachment at the end furthest from the floor, for example, a bayonet

connection easy to action externally.

The other end of each upright may be equipped with a hinge supporting panel 10 which is equipped with a square reinforcing element corresponding to the hinge itself designed to support the solarium 10 in the working position.

The uprights enable the solarium 10 to be moved from the standby position in which the panel 10 is adjacent to the wall and held by insertion of the bayonet connections at the ends into a working position in which the panel 10 is placed in a position approximately at right angles to the wall by means of the support provided by the square reinforcing elements.

In this way, a suitable surface may be located under the solarium 10 to allow the user to take up a supine position, for example a bed or couch.

According to a further embodiment, the panel solarium 10 may be fixed to a domestic door, occupying the minimum space possible in a restricted area.

The frame may be in satin finish aluminium while the cover sheet may be in transparent low radiation absorption acrylic material.

The dimensions of the panel 10 may be in the order of 60 centimetres wide, 200 centimetres high and 9 centimetres deep, with a total weight of about 50 kilograms.

There may be, for example, 12 lamps 12, each absorbing a power of 100 or 160 W for a total power of 1,250 or 2,000 W absorbed by the solarium 10.

This power can easily be managed by a domestic electricity mains as it is comparable with that absorbed by any other household appliance.

CLAIMS

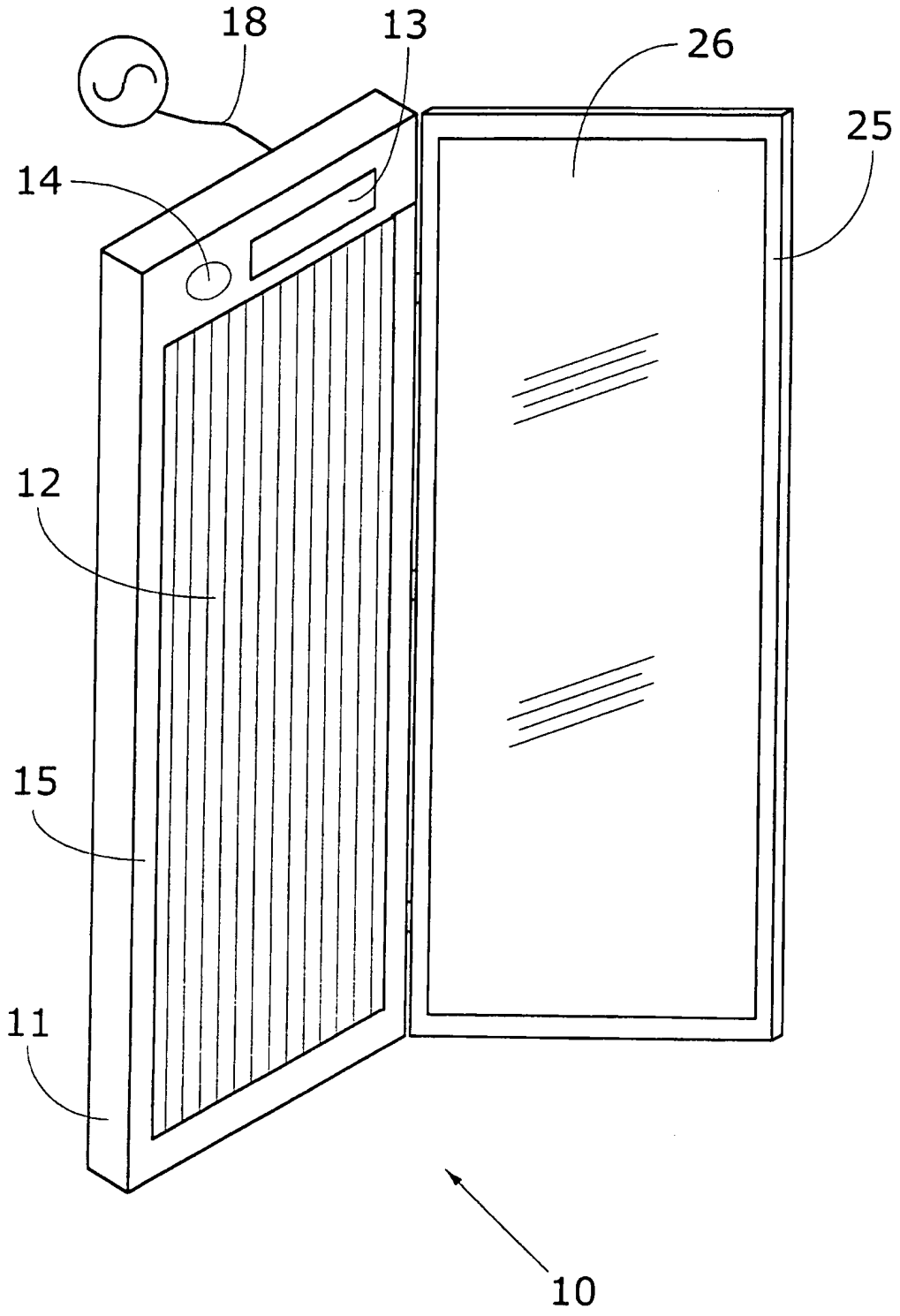
1. A panel solarium (10) comprising a frame (11) supporting a series of UV rays emitting lamps (12), a control device (13) and a timer (14) regulating the intensity of light emitted by said lamps (12) and an electrical power supply circuit enabling said solarium (10) to be connected to a suitable source of electric energy, characterised in that it has the configuration of a cabinet including said frame (11), and in that it comprises means for attaching said cabinet to a fixed or mobile wall.
2. A solarium (10) according to claim 1 characterised in that it comprises at least one door (25) closing the solarium when not in use.
3. A solarium (10) according to anyone of the preceding claims characterised in that said door (25) has reflecting surfaces (26) facing, when in use, towards the space irradiated by said lamp (12) and also on the opposite side with the function of a normal wall mirror.
4. A solarium (10) according to anyone of the preceding claims characterised in that said frame (11) has a recess housing said lamp or lamps (12), equipped with surfaces in reflecting material in order to guarantee uniform diffusion and minimum dispersion of the light radiation.
5. A solarium (10) according to claim 4 characterised in that said recess is closed by a cover sheet in transparent low radiation absorption material.
6. A solarium (10) according to anyone of the preceding claims characterised in that said control device (13) comprises at least one display indicating instantaneous operating parameters and a device for managing and programming the treatment.
7. A solarium (10) according to anyone of the preceding

claims characterised in that it comprises an acoustic signal indicating the end of treatment.

8. A solarium (10) according to anyone of the preceding claims characterised in that said means of fixing the panel to the wall consist of uprights with an attachment/detachment means of constraint at one end and a hinge supporting said panel (10) at the other end.

9. A solarium (10) according to anyone of the preceding claims characterised in that said frame (11) is made from aluminium with either a satin finish or epoxy powder coated in various colours.

1/1



INTERNATIONAL SEARCH REPORT

International Application No
PCT/IT 01/00125

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61N5/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 335 724 A (FREI HANS-JOACHIM ET AL) 22 June 1982 (1982-06-22) column 3, line 28 -column 4, line 13 column 6, line 3 - line 45; figures 3,4 column 5, line 14 - line 46	1-5,8,9
Y		6,7

Y	DE 37 08 820 A (KRATZ JOSEF GMBH) 29 September 1988 (1988-09-29) column 3, line 49 - line 68 column 5, line 20 - line 40 column 9, line 7 - line 9	6,7

	-/--	

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
25 June 2001	02/07/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Petter, E

1

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IT 01/00125

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	DE 28 21 891 A (FREI HANS JOACHIM) 29 November 1979 (1979-11-29) page 7, paragraph 1 page 8, paragraph 1 page 13, paragraph 5 -page 15, paragraph 1 page 18, paragraph 2; figures 7A,7B	1,4,5,8, 9
X	NL 9 400 632 A (SPELMAP KABEL B V) 1 December 1995 (1995-12-01) page 1, line 17 - line 24 page 5, line 4 - line 11; figures 3A-3C	1,4,5,8, 9
A	DE 299 15 881 U (GOLF PROTEC GMBH & CO KG) 9 December 1999 (1999-12-09) the whole document	1-3
A	GB 2 201 502 A (MACFARLANE WILLIAM IAN) 1 September 1988 (1988-09-01) page 14, line 11 -page 15, line 5	1,6
A	DE 296 17 827 U (BECKMANN GMBH) 12 December 1996 (1996-12-12) the whole document	1,6

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

national Application No
PCT/IT 01/00125

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4335724 A	22-06-1982	DE 7702074 U	24-11-1977
		DE 7711270 U	28-07-1977
		DE 7734341 U	16-03-1978
		GB 2007825 A	23-05-1979
DE 3708820 A	29-09-1988	NONE	
DE 2821891 A	29-11-1979	DE 2910865 A	02-10-1980
NL 9400632 A	01-12-1995	NONE	
DE 29915881 U	09-12-1999	NONE	
GB 2201502 A	01-09-1988	NONE	
DE 29617827 U	12-12-1996	NONE	